

2.7 **Family Aphyonidae**

Family name: Aphyoninae Jordan and Evermann (1898).

Number of recognized genera: 6.

Diagnosis and description: Body elongate with **long dorsal- and anal-fin bases joined to caudal fin; scales absent, skin loose, transparent and gelatinous; eyes poorly developed or not visible; basibranchial tooth patches absent;** gill rakers present or absent; **swimbladder absent; viviparous**, males and often females with variously developed genital appendages; pelvic fin with 0 or 1 ray; **precaudal vertebrae 26 to 50.**

Habitat, distribution, and biology: Most probably living on or near the bottom at depths between 230 to 5 600 m. Found at lower latitudes in all oceans. Viviparous, with relatively few, large eggs and consequently large larvae. Except for *Barathronus*, aphyonid larvae probably remain near the bottom.

Interest to fisheries: None.

Key to genera

- 1a. Anterior gill arch with 23 to 35 developed rakers; caudal-fin rays (9)10; adults with hour-glass shaped vertebral centra *Barathronus*
- 1b. Anterior gill arch with 0 to 14 developed rakers; caudal-fin rays 6 to 8; adults with rectangular vertebral centra in lateral view → 2
- 2a. Pectoral-fin peduncle much longer than wide *Sciadonus*
- 2b. Pectoral-fin peduncle as wide as long → 3
- 3a. Pelvic fins absent; no developed gill rakers on anterior arch → 4
- 3b. Pelvic fins with 1 ray in each; 3 to 19 developed gill rakers on anterior arch → 5
- 4a. Depth at anus about 7% standard length; mouth horizontal *Parasciadonus*
- 4b. Depth at anus more than 10% standard length; mouth oblique *Meteoria*
- 5a. Pectoral-fin rays 13 to 19; the almost horizontal mouth ending well behind eye . . *Aphyonus*
- 5b. Pectoral-fin rays 23 to 27; the very oblique mouth ending in front of the vestigial eyes. *Nybelinella*

List of nominal genera

Alexeterion Vaillant, 1888 (junior synonym of *Barathronus*)
Aphyonus Günther, 1878
Barathronus Goode and Bean, 1886
Leucochlamys Zugmayer, 1911 (junior synonym of *Sciadonus*)
Meteoria Nielsen, 1969
Nybelinella Nielsen, 1972
Nybelinia Nielsen, 1969 (preoccupied -substituted by *Nybelinella*)
Parasciadonus Nielsen, 1984a
Sciadonus Garman, 1899

Aphyonus Günther, 1878

Type species: *Aphyonus gelatinosus* Günther, 1878 by monotypy.

Synonyms: None.

Number of recognized species: 4.

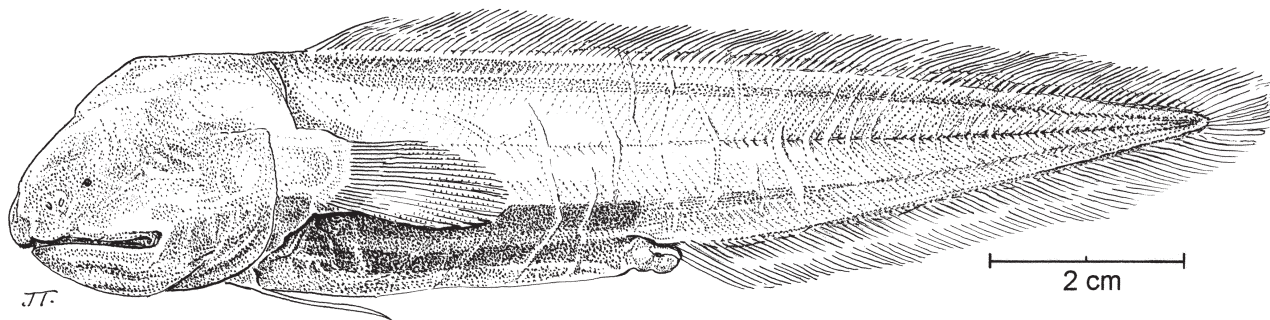


Fig. 131 *Aphyonus gelatinosus* (from Nielsen, 1969)

Diagnosis and description: Body short, depth at anus more than 10% standard length; eyes small or not externally visible; palatines edentate; anterior gill arch with 3 to 14 developed rakers; dorsal-fin rays 68 to 116; caudal-fin rays 7 or 8; anal-fin rays 53 to 65; pectoral fin with short peduncle and 13 to 19 rays; pelvic fin with 1 ray; number of precaudal vertebrae 26 to 33, total vertebrae 55 to 84, vertebral centra in adults rectangular in lateral view.

Revisions: Nielsen (1974).

Geographical distribution: Below tropical and subtropical areas of all oceans.

Habitat and biology: Benthopelagic at 900 to 5 011 m.

Interest to fisheries: None.

Size: At least 25 cm.

Remarks: Material of 2 or 3 undescribed species is being studied.

Key to species

- 1a. Dorsal-fin rays 93 to 116; caudal vertebrae 50 to 53; predorsal length 28 to 30.5% standard length *A. gelatinosus*
- 1b. Dorsal-fin rays 68 to 75; caudal vertebrae 38 to 40; predorsal length 40.5 to 43.5% standard length → 2
- 2a. Long rakers on anterior gill arch 3 or 4; pectoral-fin rays 13 or 14 *A. rassi*
- 2b. Long rakers on anterior gill arch 9 to 14; pectoral-fin rays 16 or 17 → 3
- 3a. Long rakers on anterior gill arch 9; precaudal vertebrae 32; body depth at anterior end of dorsal fin 21% standard length; preanal length 59% standard length *A. brevidorsalis*
- 3b. Long rakers on anterior gill arch 14; precaudal vertebrae 26; body depth at anterior end of dorsal fin 11% standard length; preanal length 50% standard length *A. bolini*

List of nominal species

Aphyonius bolini Nielsen, 1974. West Pacific Ocean, western Indian Ocean. Benthopelagic at 1 000 to 1 500 m. Rare.

A. brevidorsalis Nielsen, 1969. Off Southeast Africa. Benthopelagic at 1 500 m. Rare.

A. gelatinosus Günther, 1878. In all oceans. Benthic at 900 to 2 500 m. Uncommon.

A. mollis Goode and Bean, 1886 (junior synonym of *A. gelatinosus*).

A. rassi Nielsen, 1975b. Caribbean Sea. Benthopelagic at 2 610 to 4 412 m. Rare.

Barathronus Goode and Bean, 1886

Type species: *Barathronus bicolor* Goode and Bean, 1886 by monotypy.

Synonyms: *Alexeterion* Vaillant, 1888, type species *Alexeterion parfaiti* Vaillant, 1888.

Number of recognized species: 9.

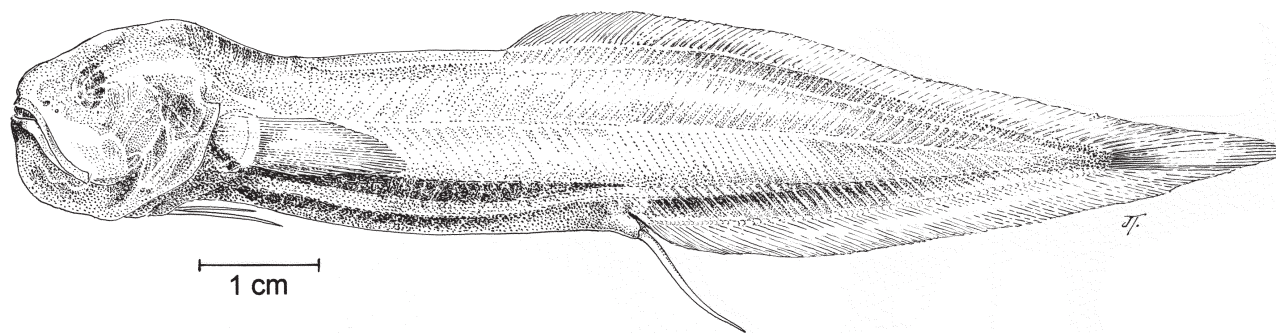


Fig. 132 *Barathronus bicolor* (from Nielsen, 1969)

Diagnosis and description: Body short; eyes deep-set; **palatine teeth present**; anterior gill arch with **23 to 35 developed rakers**; dorsal-fin rays 62 to 82; caudal-fin rays (9)10; anal-fin rays 49 to 73; **pectoral fin with short peduncle and 21 to 33 rays**; pelvic fin with 1 ray; precaudal vertebrae 26 to 38, total vertebrae 66 to 89, **vertebral centra in adults spindle-shaped in lateral view**.

Geographical distribution: Below tropical and subtropical areas of all oceans.

Habitat and biology: Benthic at 229 to 5 005 m. Okiyama and Kato (1997) described a 42 mm long epipelagic juvenile *Barathronus pacificus*.

Interest to fisheries: None.

Size: At least 25 cm.

Remarks: Material of 2 or 3 undescribed species is being studied.

Key to species: Not possible at present.

List of species

Barathronus affinis Brauer, 1906. Indian Ocean. Benthopelagic at 2 919 m. Rare.

B. bicolor Goode and Bean, 1886. Gulf of Mexico and Caribbean Sea. Benthopelagic at 549 to 1561 m. Common.

B. bruuni Nielsen, 1969. Indian Ocean. Pelagic between 0 to 1 700 m. Rare.

B. diaphanus Brauer, 1906. Indian Ocean and West Pacific. Benthopelagic at 732 to 1 756 m. Rare.

B. maculatus Shcherbachev, 1976. Indian and West Pacific Oceans. Benthopelagic at 386 to 1 525 m. Rare.

B. multidentis Nielsen, 1984b. Northwest Atlantic Ocean. Benthopelagic at 3 610 to 4 279 m. Rare.

B. pacificus Nielsen and Eagle, 1974. Northeast Pacific Ocean. Benthopelagic at 3 334 to 3 860 m. Rare.

B. parfaiti (Vaillant, 1888). East Atlantic Ocean. Benthopelagic at 1 845 to 5 005 m. Rare.

B. unicolor Nielsen, 1984b. Off Morocco and Florida. Benthopelagic at 2 931 to 3 934 m. Rare.

***Meteoria* Nielsen, 1969**

Type species: *Meteoria erythrops* Nielsen, 1969 by monotypy.

Synonyms: None.

Number of recognized species: 1.

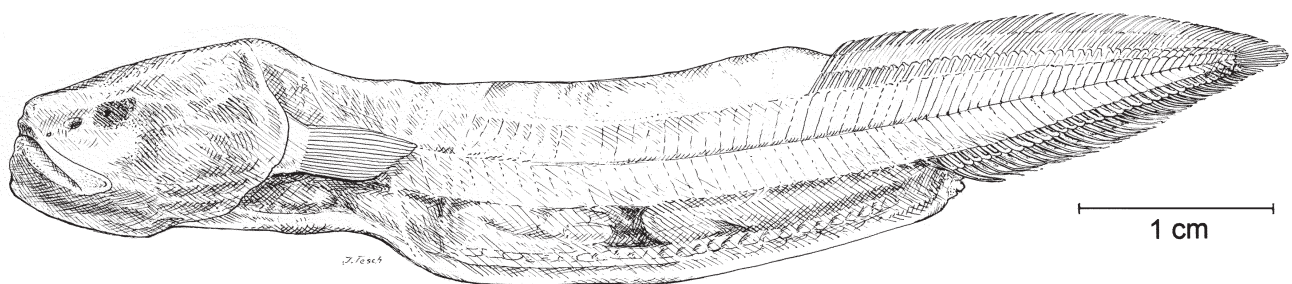


Fig. 133 *Meteoria erythrops* (from Nielsen, 1969)

Diagnosis and description: Body short, caudal part less than 1/3 of standard length; eyes minute; palatines edentate; anterior gill arch with 0 developed and 7 or 8 vestigial rakers; dorsal-fin rays 48 to 50; caudal-fin rays 8; anal-fin rays 34 to 40; pectoral fin with short peduncle and 13 to 15 rays; pelvic fin absent; precaudal vertebrae 39 to 41, total vertebrae 68 to 70, vertebral centra in adults rectangular in lateral view.

Revisions: Nielsen (1969).

Geographical distribution: Atlantic Ocean between 28° and 42°N.

Habitat and biology: Benthopelagic at 4 540 to 5 320 m.

Interest to fisheries: None.

Size: At least 75 mm.

Remarks: Material of 1 undescribed species is being studied.

List of species

M. erythrops Nielsen, 1969. Information see above. Rare.

Nybelinella Nielsen, 1972

Type species: *Barathronus erikssoni* Nybelin, 1957 by monotypy.

Synonyms: *Nybelinia* Nielsen, 1969 (preoccupied).

Number of recognized species: 2.

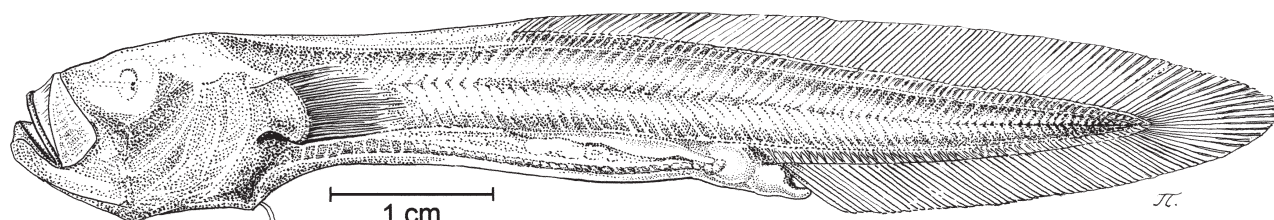


Fig. 134 *Nybelinella erikssoni* (from Nielsen, 1969)

Diagnosis and description: Narrow body, **caudal part about 1/3 of standard length**; eyes indistinct; **palatines edentate**; **anterior gill arch with 6 to 19 developed and 4 to 18 vestigial rakers**; dorsal-fin rays 70 to 102; caudal-fin rays 8; anal-fin rays 50 to 57; **pectoral fin with short peduncle and 23 to 27 rays**; pelvic fin with 1 ray; precaudal vertebrae 36 to 41, total vertebrae 70 to 79, **vertebral centra in adults rectangular in lateral view**.

Revisions: None.

Geographical distribution: Indian and Atlantic Oceans.

Habitat and biology: Benthopelagic at 4 640 to 5 440 m.

Interest to fisheries: None.

Size: At least 97 mm.

Remarks: Material of 1 undescribed species is being studied.

Key to species

- 1a.** Long rakers on anterior gill arch 6 or 7; predorsal 40 to 42% standard length . . *N. erikssoni*
- 1b.** Long rakers on anterior gill arch 19; predorsal 52% standard length *N. brevidorsalis*

List of species

Nybelinella brevidorsalis Shcherbachev, 1976. Southeastern Indian Ocean. Benthopelagic at 5 160 m. Rare.

N. erikssoni (Nybelin, 1957). Atlantic Ocean between 45°N and 27°S. Benthopelagic at 4 640 to 5 440 m. Rare.

***Parasciadonus* Nielsen, 1984**

Type species: *Parasciadonus brevibrachium* Nielsen, 1984a by monotypy.

Synonyms: None.

Number of recognized species: 2.

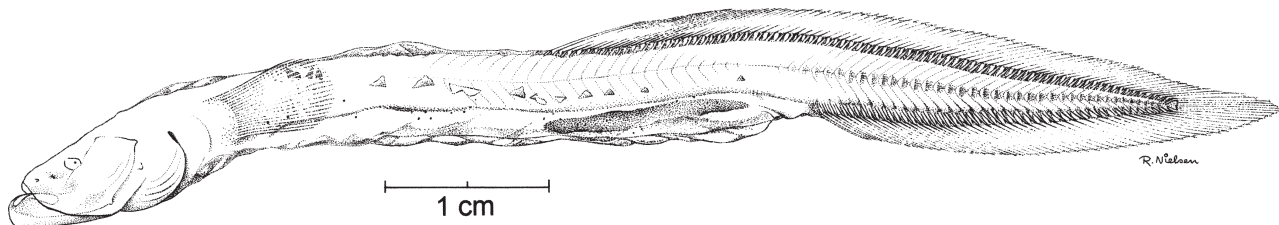


Fig. 135 *Parasciadonus brevibrachium* (from Nielsen, 1984)

Diagnosis and description: Body long and slender with lower jaw protruding and an almost horizontal mouth, head twice as wide as body, depth of body at origin of anal fin about 7% standard length; eyes extremely small; dentition very weak with edentate palatines; anterior gill arch with 0 developed and 10 to 15 vestigial rakers; dorsal-fin rays 47 to 78; caudal-fin rays 7 or 8; anal-fin rays 40 to 48; pectoral fin with short peduncle and 12 to 20 rays; pelvic fin absent; precaudal vertebrae 34 to 50, total vertebrae 62 to 85, vertebral centra in adults rectangular in lateral view.

Revisions: Nielsen (1997).

Geographical distribution: Central Atlantic Ocean and off New Caledonia.

Habitat and distribution: Benthopelagic at 3 680 to 5 073 m. No males known and females are without intromittant organ.

Interest to fisheries: None.

Size: At least 72 mm.

Key to species

- 1a. Dorsal-fin rays 78; anal-fin rays 48; pectoral-fin rays 20; precaudal vertebrae 50; anteriormost anal-fin ray below 33rd dorsal-fin ray *P. brevibrachium*
- 1b. Dorsal-fin rays 47; anal-fin rays 40; pectoral-fin rays 12; precaudal vertebrae 34; anteriormost anal-fin ray below 11th dorsal-fin ray *P. pauciradiatus*

List of species

Parasciadonus brevibrachium Nielsen, 1984a. Central Atlantic Ocean. Benthopelagic at 5 073 m. Rare.

P. pauciradiatus Nielsen, 1997. Off New Caledonia. Benthopelagic at 3 680 to 3 700 m. Rare.

Sciadonus Garman, 1899

Type species: *Sciadonus pedicellaris* Garman, 1899 by monotypy.

Synonyms: *Leucochlamys* Zugmayer, 1911, type species *Leucochlamys cryptophthalmus* Zugmayer, 1911.

Number of recognized species: 4.

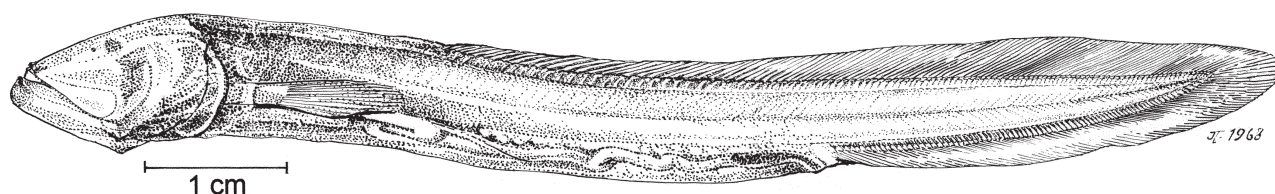


Fig. 136 *Sciadonus galathea* (from Nielsen, 1969)

Diagnosis and description: Body long and slender with protruding lower jaw and almost horizontal mouth; eyes indistinct; palatines edentate; anterior gill arch with 0 developed and 1 to 15 vestigial rakers; dorsal-fin rays 68 to 108; caudal-fin rays 6 or 7; anal-fin rays 42 to 48; pectoral fin with 9 to 14 rays, pectoral-fin peduncle much longer than wide; pelvic fin with 0 or 1 ray; precaudal vertebrae 39 to 48, total vertebrae 68 to 86, vertebral centra in adults rectangular in lateral view.

Revisions: Nielsen (1969).

Geographical distribution: Below tropical and subtropical areas of all oceans.

Habitat and biology: Benthopelagic at 1 785 to 5 610 m.

Interest to fisheries: None.

Size: At least 100 mm.

Remarks: Recently caught *Sciadonus* material indicates a wide variation of many of the meristic characters. Further studies may result in synonymizing some of the species.

Key to species: Not possible at present.

List of nominal species

Sciadonus cryptophthalmus (Zugmayer, 1911). Northeastern Atlantic Ocean. Benthopelagic at 5 000 m. Rare.

S. galathea (Nielsen, 1969). Atlantic and Pacific Oceans. Benthopelagic at 1 785 to 5 440 m. Rare.

S. jonassoni (Nybelin, 1957). Atlantic Ocean. Benthopelagic at 5 045 to 5 610 m. Rare.

S. kullenbergi Nybelin, 1957 (junior synonym of *S. pedicellaris*).

S. pedicellaris Garman, 1899. East Pacific and North Atlantic Oceans. Benthopelagic at 1 847 to 4 880 m, including *Sciadonus* sp. from Nielsen and Eagle (1974). Rare.